The American Midland Naturalist

PUBLISHED BI-MONTHLY BY THE UNIVERSITY
OF NOTRE DAME, NOTRE DAME, INDIANA

VOL. IX. SEPTEMBER-NOVEMBER, 1924. NOS. 5-6.

The Children's Museum of the Brooklyn Institute of Arts and Sciences, Brooklyn, New York.

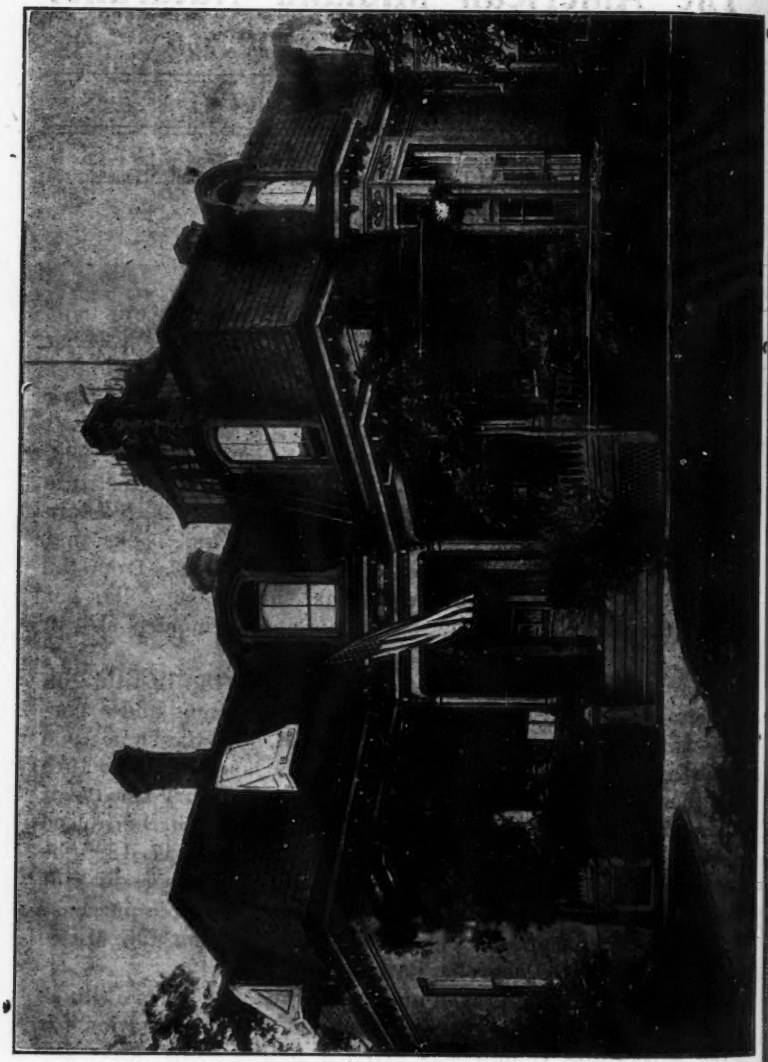
ORIGIN.

The Building occupied by the Children's Museum was built as a residence in 1867, the house and grounds generally being known as the Adams Estate. About twenty-five years later the City of Brooklyn bought the estate for part of its park system, and named it Bedford Park.

Plans were being made to remove the house when, in 1893, the old Washington Street building of the Brooklyn Institute of Arts and Science was destroyed by fire. In order to obtain storage space for the collections, apparatus and books that were saved, the Institute leased the Adams house from the Department of Parks for the nominal sum of one dollar per year, the lease to be renewable. This arrangement is still in effect.

In 1899 the present museum building of the Institute on Eastern Parkway was opened, and the collections and a portion of the books were transferred to it. At the same time the favorable location and the large, yet home-like structure of the house suggested to Professor William Henry Goodyear, curator of fine arts in the Institute, that it might be turned into a special museum for children. On January 17, 1899, he communicated the suggestion to Franklin W. Hooper, director of the Institute, at the same time recommending the purchase of various educational charts and models from the Musée Scolarie of Emile Deyrolle, Paris.

The plan was approved and a curator, Miss Anna Billings Gallup, appointed for the new museum. As preparation for the work Miss Gallup was given a four months' leave for study of museums and other educational institutions of



Europe. The study covered twenty-eight museums in seven countries, and many consultations with museum experts who were particularly interested in interpreting the museum idea for children. Today a curator, though it might be to his advantage to journey to Europe, would not be forced to do so; every American Museum of importance is making some effort to reach children, and most of them are making the juvenile work a prominent part of their programs. But things were very different a quarter of a century ago, when even our best museums were largely store-houses of mounted specimens.

The purchases recommended by Professor Goodyear were made, and to the stock of models and charts were added small collections of birds, insects, shells, and minerals, and the whole were installed in a few rooms of the old mansion. With this small equipment the Children's Museum, the first of its kind in the world, was opened to the public on December 16, 1899.

BUILDING.

The structure which houses the Museum, as said, was built in 1867 as a residence, at a time when much of the locality in which it was situated was covered with thick woods and one might have a whole city block for his grounds. The mansion is about fifty by one hundred feet in greatest measurements, with the ceilings of the first floor fifteen feet in height, and those of the second floor twelve feet. The second story has a mansard roof with dormer windows that have a moderate offset.

The windows are numerous and large, and let in a great deal of light that is tempered somewhat by the nearby trees. The large rooms and high ceilings allow for cases of adequate depth and height for all of the exhibits, while the fact that the building was once a home, adds cheer. Everything possible is done to save the children from museum fatigue.

The walls are painted light buff, and the framework of the cases, which is of wood, white. The floor is covered with brown cork linoleum. Tables, desks, and similar furniture are golden oak. Here, as in the general arrangement, every effort is made to preserve informality and cheer. The lecture hall,

measuring twenty-eight by sixteen feet, is furnished with folding chairs, blackboards, and other equipment, as well as a motion picture machine, stereopticon, and screen. The cost of these was $600, $250, and $50 respectively.

ORGANIZATION.

The Children's Museum forms a specialized part of the work under the Department of Museums of the Brooklyn Institute of Arts and Sciences. The complete organization of this institution includes these divisions:

1.—The Department of Education, with headquarters in the Academy of Music building.

2.—The Department of Botanic Gardens, which maintains a large botanical garden with headquarters on Washington Avenue.

3.—The Department of Museums, which maintains the main Brooklyn Museum at Eastern Parkway and Washington Avenue, and the Children's Museum, in Bedford Park.

The laboratory formerly maintained by the Institute at Cold Spring Harbor, Long Island, has been given independent existence within the last few months.

The executive head of the Department of Museums exercises direct control over the larger museum, and general control over the Children's Museum, but the direction of internal affairs of the latter is left in the hands of its supervising officer, the Curator.

STAFF.

As it is at present organized, the staff of the museum consists of the following persons:

Director of Museums, Brooklyn Institute of Arts and Sciences, ... William Henry Fox, A. B., Litt. D.
Curator ..... Anna Billings Gallup, S. B.
Assistant Curator ..... Dorothy F. Goerz, A. B.
Museum Instructor and Guide ..... Edith Campbell, A. B.
Secretary ..... Marguerite Wilson Carmichael
Librarian ..... Miriam Stanfield Draper

ARTISTS IN PREPARATION OF EXHIBITS.

Geographical Models ..... Dwight Franklin
Historical Models ..... Agnes E. Bowen
Children's Loan Collection.
Franklin W. Hooper Memorial ..... Clara L. Parsons

WOMAN'S AUXILLIARY OF THE CHILDREN'S MUSEUM.

President ..... Mrs. I. Sherwood Coffin
Chairman, Executive Board ..... Mrs. John J. Schoonhoven

Ordinarily there are two assistant curators, one in charge of lectures and the other having charge of the exhibits. During the wave of "war economy" the City removed provision for one of these, but efforts are being made to have the position restored. There is a janitorial staff of five.

The instruction staff are college graduates, who know the subjects they teach and understand how to present them to children. The museum guide meets the children in the exhibit rooms, answers their questions, directs conversation, and conducts the museum games. Hers also is the task of securing identification of the many objects which the children pick up and bring to the museum in search of information. A great deal of the same sort of work falls upon the librarians, who make it a point to encourage the children to read about their finds.

In addition to the regular staff, there are many volunteers who from time to time assist in the work of the Museum.

THE WOMEN'S AUXILIARY.

To quote from the constitution, "The purpose of the Woman's Auxiliary of the Children's Museum, of the Brooklyn Institute of Arts and Sciences, shall be the upbuilding of the Museum, the advancement of its interests, the broadening of the scope of its educational work, the increase of its collections, and the enlargement of its equipment in every branch of its activity." The function of the Auxiliary is to assist the Governing Committee of Museums which is composed of Trustees who control Museum Departments of the Brooklyn Institute.

The Woman's Auxiliary had its inception at the time of the presentation of their first Dwight Franklin Geographical Model to the Children's Museum by the Brooklyn Woman's Club.

An appeal was made in the Long Island Council of Women's Clubs to continue this work, and a committee was appointed in January 1915 to interest the clubs of Brooklyn and Long Island in completing the equipment of a Geography Room in the Children's Museum. The appeal was successful, and a sum sufficient to complete the work was raised.

After the installation and formal presentation of these models in the winter of 1916 a few women organized to do systematic work for the Museum. A Constitution and By-laws were adopted; officers and executive board elected, and the Constitution and By-laws were approved by the trustees of the Brooklyn Institute of Arts and Sciences.

From the beginning the Auxiliary has had an Educational Secretary who has directed and inspired the Executive Board. Through her activity, much misdirection of energy has been avoided. The organization functions through its three standing committees and at the annual meeting reports of these committees are read. The committees are the following:

MEMBERSHIP COMMITTEE.

The members of this committee by individual contact in the community seek to enlarge membership, make the Museum better known, and its ideals better understood.

SPEAKERS' BUREAU.

The members of the Committee volunteer their services to address clubs, societies and schools on topics relevant to the work or needs of the Children's Museum. Through the radio a series of lectures have been broadcast with desirable results. One of the series by "The Museum Lady" includes in its program:

A talk on one of the exhibit rooms. (Each time a story is woven about a different room.)

A group of poems suggested by the room's exhibits.

A group of children's songs. (Nature, trees, butterflies.)

AMERICANIZATION COMMITTEE.

The Americanization Committee carries out a definite educational program which links the Museum with new groups and educational centers, and is an additional means of carrying the work to children.

Through the activities of this Committee a Field Secretary has been put to work in the community. Her work is to bring groups to the Museum—to make new connections between the child public and the Children's Museum. The work is approached in two channels: first, through the schools, both private and public; second, through the children's own organizations, such as Boy Scouts, Girl Scouts, Woodcraft and Campfire Girls. Thus children are drawn to the Museum both in school and in leisure hours. The Field Secretary further seeks for increased coöperation with the various departments of the Board of Education, the district superintendents, principals, and teachers.

The Auxiliary not only contributes to the upkeep and activities of the Museum but secures valuable gifts and additions to the collections. Perhaps the most significant of these contributions is the $10,000 fund for the Franklin W. Hooper Memorial loan collections. Other gifts range from equipment for Museum hospitality, to a much needed motor car.

The Woman's Auxiliary pays the salary of a qualified teacher to conduct the summer field trips, an annual feature of the vacation program. To augment the summer program, the lecture room is cleared of its benches and chairs, and here the children bring their specimens from the field trips, and mount, study, and label their collections.

Realizing the limitations of the Museum's work because of inadequate space, the women of the Auxiliary initiated and maintained a determined effort to secure a house and some ground across the street from the Museum, on Brooklyn Avenue between St. Marks Avenue and Prospect Place. The campaign ended March 2, 1923, when the Board of Estimate and Apportionment of the City of New York voted to take over the old Smith homestead as Park property; as with the

Museum grounds, the land to be used by the City as a public park. At this writing the City has voted to appoint an architect to draw plans for remodeling the building for Museum purposes, and it is expected that work speedily will follow the completion of these plans.

FINANCE.

The Children's Museum receives its principal support from the City of New York, Borough of Brooklyn, which furnishes about $20,000 annually. The Woman's Auxiliary has a budget of $7,500 per year. This covers its own operating expenses as well as its contributions to the museum funds. In addition there are contributions from purely private sources, ranging from a few dollars to $10,000 as the maximum. Many specimens and books are received by gift.

COLLECTIONS.

The equipment of the museum is based on a thorough understanding of the needs and interests of children. Objects to be displayed are selected with reference to the capabilities of the child's mind, and the way they will fit into a story-telling exhibit. Children's Museum labels, like Children's Museum specimens, are carefully selected and phrased in simple words, as well as being printed in clear type.

BIRD COLLECTION.

The first room to the right of the wide corridor which one enters on coming into the building is devoted to birds. The room itself is a cheery, home-like place with double doorway and large bay windows, in one of which a balanced aquarium glows green and gold with its water plants and bright colored fish.

Special prominence is given to the birds of Prospect Park, since they are the ones which Brooklyn children can see and study. One hundred and sixty species have been recorded by the Bird Lovers' Club, and all of the important ones are shown in this room. In the cases around the wall the birds are placed in life like attitudes (they are excellently mounted) in accessories suggesting the natural surroundings. The arrangement

BIRDS THAH CAN BE SEEN IN WINTER—A CASE IN THE BIRD ROOM.

is not systematic, but rather in accordance with the seasons during which the birds may be seen. They are grouped and labeled as follows:

Case 1.—*Permanent Residents*—Birds that can be seen in Prospect Park during all seasons. With the exception of the Black-crowned Night Heron, all of these birds nest in the Park.

Cases 2 and 3.—*Winter Residents*—Birds that can be seen in Prospect Park during the winter months—December, January, and February. These birds have arrived from the North and will pass the winter in the Park.

Also in Case 3 are the occasional visitants, birds which visit the Park at irregular intervals during the Winter.

Cases 4, 5 and 6.—*Summer Residents*—Birds that can be seen in the Park during the summer months, June, July and August. These birds have arrived from the South to spend the summer and to nest in the Park, where they may be seen by the children who visit the museum.

Occasional visitants also are in Case 6, while Cases 7 to 11 inclusive have spring and summer migrants—Birds that can be seen in the Park during the spring months, March, April and May; and during the Autumn months, September, October and November. All of these pass through the Park on their way North and South, but do not nest there.

Although the limited space will not permit of elaborate habitat groups, an attempt has been made to tell the life history of the birds, or to illustrate some interesting facts about them. In many instances male and female are shown together with their nests and eggs. The difference between the colors of adult and young, or between those of the same bird at various seasons thus is emphasized, and the seasonal rhythm of life indicated in a small part, at least. Variations in birds of the same general sorts are illustrated by such contrasting types as the eagle and Pygmy owls. The specimens are helped out by lists which contain names of the birds of the three different seasons, information as to the particular months of arrival and departure, and accounts of peculiar feeding and nesting habits.

The large central cases contain birds from all parts of the

world, interesting because of their plumage, grotesque form, or unusual habits. Among these are the peacock with tail spread, the lyre bird and the penguin and a condor from South America, the flamingo, cassowary and quetzal. These cases are appropriately labeled, "Birds we read about."

When the children begin to study birds, they first learn to name the external parts of the body from a chart. Using this terminology they describe the birds in the museum accurately in preparation for their field trips. If twenty-five birds are correctly identified, a child is privileged to take a mounted bird home or to school. Identification of a hundred birds in the museum entitles the child to borrow a pair of nature study glasses for use on field trips to Prospect Park.

ANIMAL TYPE ROOM.

At the end of the corridor is the animal room, the parallel to the "Phylogenetic Hall" in large museums. Since general exhibits are impossible, the specimens are restricted to types which portray the development of animal life from its lowest forms to the tailless apes.

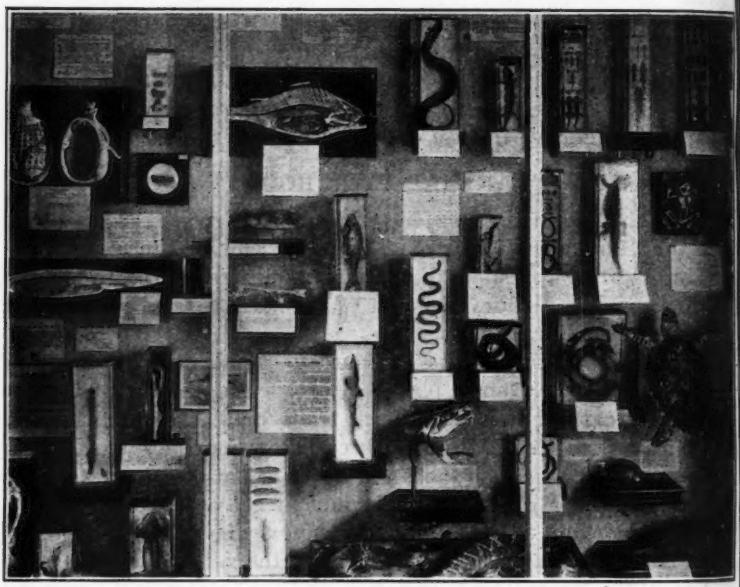
The line of increasing complexity is indicated by arrow-marked direction labels placed in each case. Strips of black molding carried down the back walls and across the bases separates the phyla while black cords outline the minor divisions. Thus, by size of label and width of outline, the observer may know at a glance which groups are co-ordinate. A case list enables him to locate quickly whatever he wishes to find.

Another distinguishing feature is the color of the bases. For all the lower forms—creatures whose habitat is the water or the sandy shore—they are gray. For the mammals they are black, or very dark, as are also the bases for models, the shelving, and the frames. Aside from the convenience of this plan the advantage of the black and gray as a setting becomes evident when brilliantly tinted sea forms are placed against it or when models which show the gorgeous hues of the living animal are introduced.

The minutest form of animals of all classes are represented by pictures. The largest animals, such as the elephant and whale, also are shown by pictures as well as models. In this

systematic evolutionary series, every animal is seen in its relation to other animals, and impresses its part in the story of classification.

At the end of the corridor adjoining this room is a supplementary collection which gives special emphasis to groups of reptilia, amphibia, and mollusca of Long Island and the vicinity of New York.



ONE OF THE PHYLOGENETIC CASES.

ANIMAL FAMILY ROOM.

Upstairs is another animal room, where animal families are shown in reproductions of their natural surroundings. The purpose of this room is to show animal homes and families and their care for their young until the latter are old enough to take care of themselves.

In a case in the center of the room is a scene representing the gnawing mammals,—a muskrat family and their hut, such

as may be found in the marshes near Newark, New Jersey. The male parent is seen swimming with a bunch of grass and mud to be used in repairing the hut. The other parent is eating a piece of sweet flag-root, and a third rat is sunning itself on a hummock of reeds. A young muskrat, about four weeks old, is on the edge of the hut while cuddled in the nest are several very small ones not more than two weeks old.

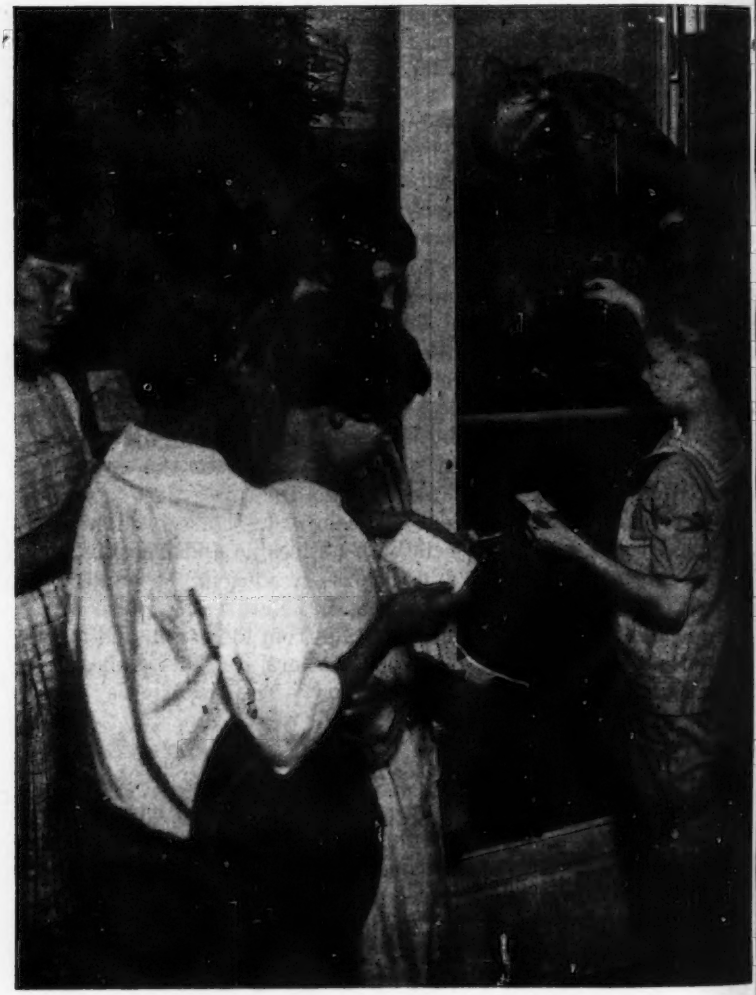
Some of the other groups in the wall cases represent the red fox, the eastern skunk, Greenland eider, young seal, American crow, woodchuck, mourning dove and Virginia rail. This secretive bird, a common summer resident of Long Island, arrives in April or May and remains until late in September. The group shows several in their favorite haunt of weed marshes overgrown with reeds and grasses. Swiftlets and their edible nests are attached to a portion of a wall. One case contains a setting hen and her chicks, things common enough to country children, but by no means so familiar to Brooklyn youngsters. Some bright verses appealing to the children take the place of the explanatory label for this group.

One case is devoted solely to color. In it are brought together a few natural objects both noticeable and pleasing for their beautiful shapes and colors—a museum parallel to Haeckel's remarkable "Art-forms in Nature." There are birds and insects, rocks and minerals from the earth, and multitudes of animals in the sea whose colors are quite as beautiful as one can find in any art gallary. The "color case" presents this fact to children.

SHELL ROOM.

In the corridor of the second floor are wall cases filled with shells from all parts of the world. There are five hundred species on exhibition, covering all the larger groups of the phylum Mollusca, and a great many of the smaller ones. As in other exhibits the frames of the cases are white, but a black background has been used in order to give to the collection that richness which can be attained only by use of black.

The "shell game" is conducted much as is the "mineral game." A cabinet containing duplicate specimens is unlocked and the shells are given the children to identify. In



THE ANIMAL GAME, ANIMAL ROOM.

this way they have the pleasure of handling the specimens and examining their beauties at close range. It is a poor game indeed in which a few youngsters do not find something to excite their curiosity and send them to the library in search of information.

INSECT ROOM.

On the main floor, opposite the Bird room is the Insect Room, where the children find moths, butterflies, beetles, dragon flies, grasshoppers, hornets and bees found in Brooklyn.

Besides local specimens there are foreign and tropical insects,—gorgeous colored moths from Africa and South America, and Brazilian beetles. These are to show that tropical insects are more brilliantly colored than native species. Some curiously formed insects also attract attention.

In this room is a large dissectible model of a silk worm. Silk caterpillars of natural size and spun silk, of different varieties are exhibited.

Not only are seen beautiful insects but larvae and caterpillars that damage our trees and injure our crops. A series of small framed case exhibits show the development and life history of the Brown tail moths, and their destruction to the leaves and bark of trees.

There is an exhibit to teach the children how they may become insect collectors. Here are butterfly nets, killing bottles, spreading boards and all the paraphernalia needed by the amateur collector.

BUSY BEE ROOM.

A "Busy Bee Room," or "Children's Laboratory" is furnished with tables where children work under the direction of a Museum instructor mounting butterflies, analyzing flowers, testing minerals, and modeling and drawing from mounted birds. The collections made by the children are displayed from time to time. A bee-hive of living bees with glass sides through which the children can see the bees at work, is a center of attraction during the active season. In late May the bees generally swarm and there always is a scramble to

get the swarm out of a tall tree in Bedford Park and into a new hive. By September there are often from 50 to 70 pounds of delicious honey ready to gather.

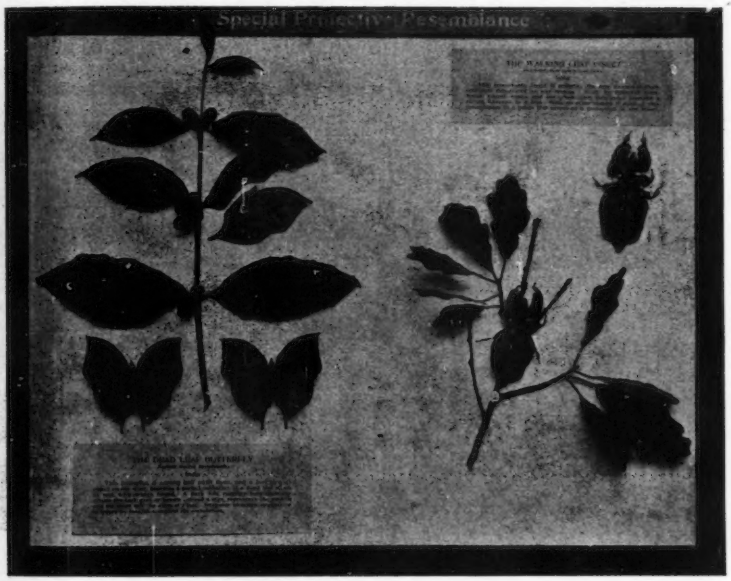
PLAYING A GAME IN THE SHELL ROOM.

MINERAL ROOM.

The Mineral Room is on the first floor at the left of the entrance. The specimens on exhibition are classified and arranged from an economic standpoint, since this arrangement

appears to be the one most intelligible and significant to the child. Wall cases contain the mineral and rock collections, while table cases and a smaller wall case display the semi-precious stones and the gems.

A model of a blast furnace occupies the center of the room and presents the entire story of the conversion of iron ore into the "pig" or bar, including the delivery of car loads of ore at



SPECIAL PROTECTIVE RESEMBLANCE—A SMALL CASE IN THE INSECT ROOM.

the furnace. Electric lighting gives to the furnace and molten metal a realistic glow.

Interest is aroused by the cases containing beautiful forms of quarz, precious stones, and "birthday stones." These are placed in careful, attractive grouping to appeal to the child. Legends connected with the birth-stones are given in rhyme.

In the wall cases are exhibits of minerals and rocks, ar-

ranged in an orderly manner—one section to iron minerals, another to manganese, cobalt, nickel, tin, zinc, and so on, another to the calcium minerals, and thus through the series. The exhibit is one that will appeal particularly to the child who wishes to make mineralogy a hobby, or to the boy who has a liking for mechanics and chemistry, and wishes to know the nature of the substances with which he works.

The rock collections are arranged in the conventional manner, according to origin. Labels explain the lava origin of

A HALF HOUR WITH THE MICROSCOPE, BUSY BEE ROOM.

igneous rocks, the nature and formation of sedimentary beds, and the processes by which rocks are metamorphosed. To show the practical side of geology and mineralogy, the cases contain articles used in every-day life that are made from the metals and stones exhibited. This part of the exhibit, of course, allows for the introduction of local products, and a museum in Georgia or one in Colorado might to advantage have a very different series of tools and utensils.

To stimulate the study of minerals, trays of labeled specimens which the children may handle are furnished them, so

that they may study such properties as composition, weight, and hardness. When they have learned a sufficient number to become acquainted with the general basis of classification, they are given large trays of unlabeled specimens which they are to identify by comparison with those on exhibition. On the Children's Museum plan, the study of minerals becomes instructive play that leads to further interest.

BOTANIC EXHIBIT.

A part of the botanical collections, and the one which first secures the attention of the visitor, is placed in the wall cases of the lower hall. It consists of about fifty enlarged dissectible paper maché models of flowers, that are part of the original equipment for the museum purchased from Deyrolle's "Musee Scolarie." The models lack the fineness of detail to be found in some of the celluloid and wax models from Germany that have been used with great success in the Education Museum (now disbanded) at the University of Chicago, but they possess much greater durability. The modeling is accurate, as also are the colors, and what little of beauty is lost is more than made up in service.

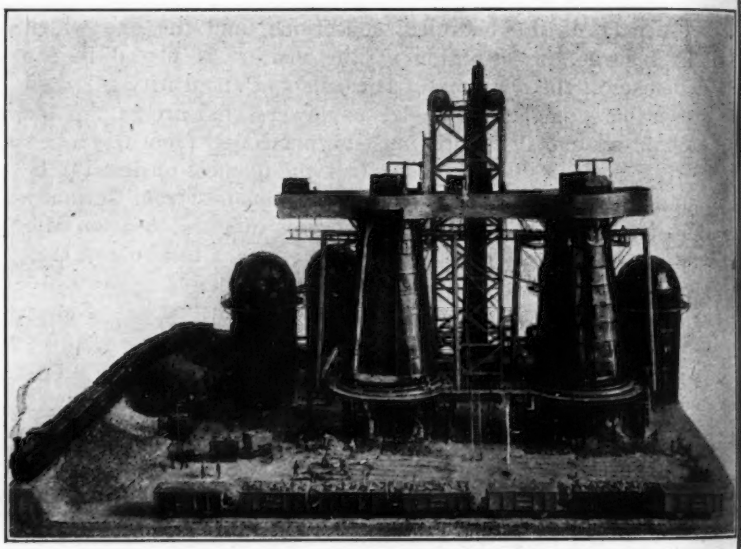
With a textbook of botany and occasional help from a museum instructor the children easily learn the parts of a flower, the uses of the parts, and the characteristics of structure on which classification is based. The extent of the information sought, is regulated by the age of the child and his position in school, but the models work equally well with grade children and high school pupils. They are accompanied by charts which show not only flowers represented by the models, but the plants on which they grow. At various lectures colored lantern slides of many of the plants growing in their native habitats are shown.

In the early spring the Busy Bee Room is supplied with many clear glass vases filled with water and containing living twigs of common trees, and the buds unfold rapidly in the sunny windows. It is common for the children to ask for pencil and paper so that they may draw the falling bud scales, or the tiny flowers of the unfolding bud. Here again is a natural and spontaneous combination of nature study and art,

the lack of which is accountable for many monstrosities of the average student's "paint book." There was much truth in the comment of a critic upon a water-color exhibit by a famous geologist, "Science is not an art, but it is plain to me that art stands badly in need of science."

HISTORY ROOM.

The history collections occupy two rooms and a portion of



MODEL OF A BLAST FURNACE.

the hall on the second floor of the building. In the early work of the museum little attention was given them, and in 1905 they consisted of but a few objects of historic interest, exhibited in cases. They interested the children as curiosities or "relics," but gave them no general conceptions, and so obviously were insufficient. As an experiment a single model of a group was put together out of pasteboard. The children showed such an interest in it that a plan at once was formulated to present a general survey of American history by

means of miniature groups and type models. As in the rest of the museum, local interests were kept in the foreground, and things which the children knew were connected with those not as familiar.

It must be admitted that the New York region has more historical associations than many other districts, and that those associations are of the sort which attract the youthful mind. Thus Hudson, always a hero with boys, doubtless landed at Coney Island. A significant battle was fought in Brooklyn, and the British prison ships were anchored in the Wallabout; Lafayette lived for a time in Brooklyn, near the Fulton Ferry; Robert Fulton often stayed at the Remsen Mansion on Hicks Street; Plymouth Church sent its own regiment to the Civil War, and its pastor, Henry Ward Beecher, set the cause of the North before England. A city in Illinois or Iowa would find it difficult to discover readily so many incidents of national and international connection in its past, yet it would be able to follow the general plan without difficulty.

The models are carefully prepared and accurate in every detail. They are grouped in five divisions, and since they present the subject from the historical standpoint, it is natural that they should begin with the first European explorers and sovereigns to take an interest in the development of America. Portraits of rulers under whose patronage navigators set out on voyages of discovery, pictures of some of their ships and incidents connected with their departure from Europe and their arrival in America supplement the groups. There is a model of Hudson's ship the "Half Moon," and a considerable series of prints from the Moran historical paintings in the Smithsonian Institution. The primitive Indian inhabitants are represented by a picture of the "Marriage of Pocahontas," a collection of ornaments and wampum, and examples of domestic utensils.

What Hudson saw as he sailed up the Narrows is portrayed in a group representing Indians digging for clams on the Gowanus beach, with a cornfield in the background. The flat on which the field is located represents the first land bought by white settlers on Long Island. The children's attention is called to the fact that the Island was called by the

Indians "Seewanhacky," or the Island of Shells, and was the great aboriginal mint of the region, producing immense quantities of shell money, or wampum.

Following the Indian group is a series of six models showing the four important types of settlers in America: the Spanish, French, British, and Dutch. Here the models have a

GETTING DOWN TO BUSINESS—MINEROLOGY GAME IN THE MINERAL ROOM.

general application equal to or even greater than that for the Brooklyn district, and may be reviewed in detail. The arrangement is chronologic, following the order of settlement by the several nationalities, beginning with that by the Spanish in 1565. With each group is the national flag of the home land.

Model 1.—*Spanish Type-Scene*—"Priest and Soldiers Plan

a New Mission," shows a Franciscan friar listening to a Spanish soldier who is urging the establishment of a new mission. The setting is a mission ambulatory and garden in the Southwest. The idea is taken from the Old Mission in Santa Barbara.

Model 2.—*French Type-Scene*—"Jesuit Arrives at Mission Station." Father Jacques, the fearless Jesuit missionary among the Northern New York Indians, the first white man to cross Lake George, is being rowed by one of the Huron Indian converts to a mission outpost at the edge of the wilderness, on the northern New York border. The Jesuits ministered to the French villages along the water-courses which for many years were the only "roads."

Model 3.—*Cavalier Type* (*first British*) *Scene*—"The Cavalier Comes to Call," pictures the meeting of a gentleman of fashion and his fiancée at the garden porch of an old red brick Virginia homestead. Vast tobacco fields appear in the background.

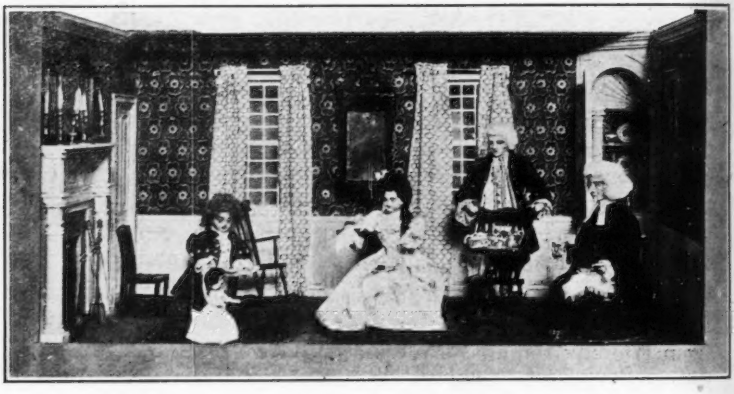
Model 4.—*Dutch Type-Scene*—"Indians Selling Furs to Dutch Traders at Fort Orange," shows a trading post in the forest at Fort Orange (Albany), the trader buying bear skins from friendly Indians, while his wife, two dogs and two pigs look on. This expresses the fact that the Dutch remained here at first entirely for trade and because of commerce cultivated the friendship of the Indians, ommitting the idea of creed in their dealings.

Model 5.—*New England Type* (*second British*) *Scene*—"The Minister Calls on the Family." The visit of the clergyman of the Congregational Church upon a prominent family of his parish. He is having the usual refreshments of Bohea tea and sponge cake. The New Englanders settled as congregations, in parishes, each with a clergyman as a dominant influence.

Model 6.—*Quaker Type* (*third British*) *Scene*—"A Quaker Quilting Bee." In this group the very name sets forth the religious idea. A "name-quilt" is being made for a bride's "setting-out." The frame is standing in an old-fashioned kitchen through whose open "entry" door arrives one of the men

guests for the supper which is to come at the end of the quilting bee.

The third section contains eight groups, six of which deal with wars in which the people of the United States, and the Colonies which preceded them, have engaged. The exhibit opens with photographs of the presidents as commanders of the army and navy, accompanied by a brief account of each administration, a history of the country's flag, and a series of small replicas of the flags used at various periods.



THE MINISTER CALLS ON THE FAMILY—A NEW ENGLAND SCENE IN THE HISTORY ROOM.

The first and second models antedate the Revolution, one portraying Miles Standish, the first commissioned military officer in New England, and the other a colonial frontiersman attacking an Indian. The background of the Standish group shows the fort and first meeting house on Burial Hill, Plymouth, protected by four small, quaint cannons from the "Mayflower." The frontiersman shows the clothing and military equipment of the time, including cartouche-box and flint-lock gun.

The Revolution is represented in a group showing a meeting between Washington and John Paul Jones—both characters of vital interest to school children. Two groups belong to

the War of 1812, one showing the Dey of Tripoli signing the treaty between the United States and Algiers, and the other Perry on the deck of the "Lawrence" during the Battle of Lake Erie. Other groups show light artillery in the Battle of Palo Alto, during the Mexican War, "Lincoln at Headquarters at Antietam," models of the "Monitor" and "Merrimac," and an incident in Crook's campaign against the Nez Perces, in 1877.

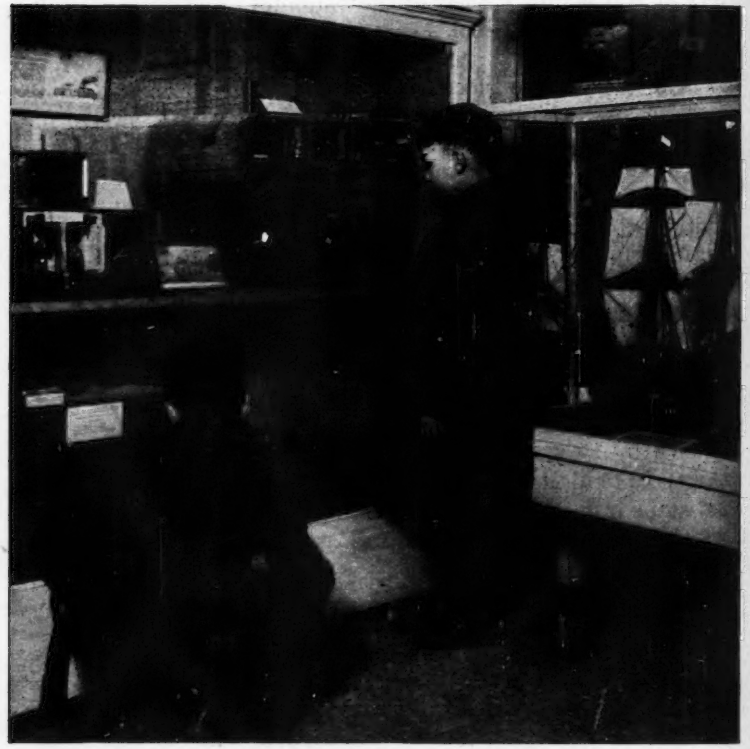
The models are placed in wall cases, and although they vary in size, average twenty-two inches in length, twelve in depth, and fifteen in height. Each group has its separate case and illumination, and stands as an individual unit in the general exhibit. Walls and other space are used to display the individual objects such as constituted the entire historical collections up to 1905.

Each model has its own label, where the story is continued in some detail. The group is designed to tell its story at a glance, even though it may tell more on close study. The duty of the label is to bring out the underlying historical motive, the chronological position of the group, and the reason why the particular subject was chosen. Thus the child, first attracted by what is pictured or shown in model, is given an easy way to discover the whole story, and thus is led by gradual steps into the study of history. The following label deals with a group that has particular appeal, and illustrates the point.

LINCOLN AT "HEADQUARTERS" AT ANTIETAM.

"As Commander in Chief, President Lincoln sometimes visited the army of the Potomac when it was in northern Virginia, in the early part of the War. The model presents such a scene, soon after the Battle of Antietam, when he has come to confer with the commanding officer, Major General George B. McClellan, who stands at the tent entrance. Brigadier General Seth Williams, Assistant Adjutant General, A. P., is seated, and Major General John A. McClernand is about to bring his chair to the table. He has just arrived from the West for a short stay in Washington, and is present not in an official capacity, but as the guest of the President, who was

his close personal frined. A conference at which terribly destructive measures against the Confederation are to be planned, is to begin, when General Williams happens to glance toward the shell-shattered house to which the last rays of



THE MERRIMAC AND MONITOR, AND OTHER SHIP MODELS IN THE HISTORY ROOM.

the setting sun give almost the appearance of occupancy and evening lights, and he sees toys under the burned and broken trees that border the driveway. He gains the attention of the others by tones of pity and surprise, "Look at those toys—

and the little sunbonnet. It appears almost as fresh as if just from the laundress' hands. The family must have picked up their child in haste and fled in terror from this house." "I don't wish to look at them," says President Lincoln. "It is dreadful that the little children of this nation must suffer from war and its memories."

This is a true incident. The officer who told it said, "We forgot the enemy in pitying the terror of these American parents who must have seized their baby from her play place and rushed to a place of safety. It was difficult to return to plans for 'wholesale destruction' of the enemy with those toys beside us."

The fact that here is the field headquarters is shown in the Army of the Potomac "Headquarters" flag above the tent. The "colors" are also suitably placed. The usual folding camp furniture of that period is seen, and the "candle-shells" upon the table are such as officers carried during the Civil War. The candle sockets unscrew and rest in the shells when not in use, and the two shells screw together, over the sockets, thus making an object that occupies but little space. The ink is also in screw-cases. The maps are carried in large envelopes, and, like the tent and the furniture, are dirty from much handling. At the rear of the tent, outside, three orderlies—who typify the extreme youth of the majority of men composing both Federal and Confederate armies—are conversing in low tones, one of them pointing to the officers as he speaks. The orderlies' horses are back of the tent, so cannot be seen.—*Miss Agnes E. Bowen.*

The entire group of history models are the work of Miss Agnes E. Bowen, whose home for many years was in Brooklyn. Throughout her life Miss Bowen was keenly interested in local history, having been initiated into the study as a child by her father. This interest, coupled with the idea of visualization, eventually resulted in the history groups, whose parallel in the large museums of the country is to be found only in the remarkable full-size historical groups which so impress the thousands of visitors at the Milwaukee Public Museum.

GEOGRAPHY ROOM.

Geography, like history, is presented mainly by means of group models. The subject is introduced by several cases of foreign dolls in appropriate costumes that line the walls of the corridor between the rooms given over to these two sciences, but it is introduced only. The real substance is in groups.

The Geography Room is one of the largest on the second floor, and is decorated in buff, with neither window nor ceiling light. About the walls is a series of white cases, containing large panes of glass. The pressing of a button reveals the most up-to-date thing in museums, devoted to an entirely new purpose: built-in, electrically lighted cases containing habitat groups of man.

The groups, executed by Dwight Franklin, portray primitive life in a manner that is vivid to large children and thoroughly comprehensible to small ones. By their models and background they indicate the "climate of a country—whether frigid, tropical, or temperate: the physical character of the land, whether mountainous, plain, desert, or jungle: the natural flora and fauna peculiar to the region, and natural resources of the country: the characteristics of the people that inhabit the country: the manner in which the lives and occupations of the inhabitants are influenced by their environment; and the extent to which development and civilization are limited by the geographical and climatic conditions of the countries in which the different peoples live. More particularly the models instruct the study of the earth as the home of man." A map of the world indicates the localities of the peoples and countries represented by the models.

The models are:

Harpooning the Walrus.—A section of the northwest coast of Greenland inhabited by the Smith Sound Eskimos.

A Quiet Evening at Home.—A cross section of the hive shaped house or igloo of the Smith Sound Eskimo, revealing their indoor life.

The Lapps.—A section of country in Northern Europe, Scandinavia, just inside the Arctic Circle, revealing scant

vegetation for reindeer to feed upon, and their habits of living.

An Informal Gathering of the Inhabitants.—A portion of the coast of the Antarctic Continent with abrupt, icy walls, icebergs, and floating ice, and a stretch of open water in the center. The only forms of life in this desolate, intensely cold region are penguins, seals and skua gulls. The model shows the behavior of lower animals when their habitat has not been disturbed by man.

THE RETURN OF THE FISHERMEN—ONE OF THE FRANKLIN GEOGRAPHICAL MODELS.

The Return of the Fisherman.—A scene of one of the tropical islands in the South Pacific Ocean. The natives having speared several large fish are drawing their outrigger-dugout on to the beach in front of their flimsily built house.

The Kangaroo Hunt.—A part of the central Australian desert, inhabited chiefly by Red Kangaroos. The human beings are aborigines and the scene depicts two of them with their weapons hunting the kangaroo to obtain food.

Stalking the Monkeys.—A scene in the lowlands of the Brazilian Jungle, the home of the toucans, monkeys, sloths,

and tapirs as well as the Carib Indians. Bright rays of the tropical sun penetrate the dense vegetation of the forest where a native is shooting at a monkey with his blow gun.

Welcoming the Traveler.—An incident in the Sahara Desert, showing a Bedouin tent pitched near a water hole, Bedouins partaking of fresh dates gathered from the date palms, and a Berber traveler, just arrived, being given a gourd of water. The camel of the Bedouins is knee-haltered. An impression is given of intense tropical heat and glare.

A Resented Intrusion.—A village of the Masai, a British East African tribe. Just before sunrise a lion has leaped into the village and seized a sheep which had been brought in the night before. The men with spears and shields are advancing on the lion in a semi circle formation with the intention of killing it.

This scene represents a frequent occurrence in British East Africa.

The Quarry Brought Home.—A dreary region in southern Patagonia. The impression is given of cold clouds and strong west wind blowing. A tent is shown belonging to one of the families of the Tehuelches. The man of the family has returned from the hunt with a guanaco and a woman is examining the skin of the slain animal. In the toldo an old woman is sipping maté through a straw.

The Habitual Fighters.—On a high, narrow, rocky, windswept ledge in the mountains of Afghanistan, three Afridis are firing upon their peacefully disposed neighbors cultivating their fields.

As we have said, the models are the work of Mr. Dwight Franklin, a specialist in museum groups of this sort. Though himself an artist, he follows closely the scientific method, and in the preparation of the groups takes great pains to assure accuracy, calling in for consultation a number of authorities on the various fields covered. That he has been successful is shown by the approval of such authorities as the late Theodore Roosevelt, Dr. Frederick A. Lucas, Dr. William T. Hornaday, the late Admiral Peary, Anthony Fiala, and C. William Beebe. Further confirmation is given by the children themselves,

with whom the Geography Room is almost the most popular spot in the museum.

The following incident is given as an interesting illustration of the way a museum expands. Miss Gallup realizing that the model system would be the ideal way to teach Geography to children, one day explained her idea to a visitor, who responded by offering a gift of money to pay for the first group.

Dr. Lucas, director of the American Museum of Natural History, assured Miss Gallup that he knew the very man who should be engaged to make such models, Mr. Dwight Franklin of New York. Miss Gallup at once sought an interview with Mr. Franklin who was at that time working on educational models for the Museum in Newark, New Jersey.

A short talk with Mr. Franklin during which he roughly sketched a series of geographical models convinced Miss Gallup she had been wisely directed, and resulted in the ordering of the first models.

A short time afterward work on the first of them was begun, and it made such striking progress that before completion of the model the movement was under way which has resulted in the completed Geography Room, probably the most striking exhibit in the museum.

ARTS AND CRAFTS ROOM.

One room is devoted to the arts and crafts of countries, both in America and other continents. There are seven wall cases and one table case. The European case contains a number of fine Portuguese figurines, and there are other figurines in the one devoted to Mexico and Central America. The Polynesia case contains various articles of clothing and furniture and a model of an outrigger canoe. In the Asia case are wooden models of women weaving matting, coolies carrying bales of tea, a farmer plowing a rice field, a model of a typical Japanese house, and—by way of contrast—an alabaster model of the Taj Mahal at Agra.

The value of models in such a study as this is almost without limit. Thus at the University of Chicago there are not

only a number parallelling those of the Children's museum, but others showing various forms of looms and weaving, an European railway train, and, most successful of all, a large model of a Viking hall, equipped with furniture, weapons, and inhabitants carved from wood. There is also an abundance of actual specimens illustrating clothing, weapons, utensils and tools, and religious articles. Everything can be taken from the cases and transported to the school rooms where it is needed. The Children's Museum does not face this difficulty, since in most cases the exhibit room also is the study hall,—and here lies one of the chief advantages of the Museum. It is able both to bring the specimens to the children and the children to the specimens, while the average school museum or children's department of a large museum can do only the former because of unsuitable and insufficient space.

LOAN COLLECTIONS.

The original loan collections of the Museum consist of small, glass-fronted boxes that the children can carry about with them. The boxes contain birds, insects, shells, or minerals, as the case may be, and are given out to children who have earned the privilege by learning in the Museum a set number of specimens. They also are sent out to centers that seek to encourage the children in nature study, and to schools. At the museum the loans are filed on shelves in a large storeroom, where they may readily be found by any of the assistants.

The small cases, though thoroughly serviceable, are only partly satisfactory. There was need for larger exhibits, in larger cases, giving more complete presentations of natural history subjects than do the box loans. After study of the "Traveling Exhibits" such as are in use at the American Museum in New York, and the Field Museum of Chicago, Curator Gallup and her staff designed a similar case suited to the precise needs of the Children's Museum. There were some modifications; it was decided to use scenic backgrounds instead of plain ones neutrally tinted, and further study showed that these backgrounds were both more service-

able and more completely represented when done in oil colors by an artist. Tinted backgrounds made from enlarged photographs, such as are used in large exhibits at the Chicago Academy of Sciences, and in School Cases of the Field Museum of Natural History, are less costly than the ones done in oil, but they also are less durable.

It was decided that the traveling exhibit should be made a memorial to the man principally responsible for the development of the Children's Museum, thus bearing the title, "The Children's Museum Loan Collection, Franklin W. Hooper Memorial."

The artist in charge of the work, Mrs. Clara L. Parsons, has been very successful in her efforts. As in many other phases of museum exhibition, this is a place where technical skill alone is not sufficient; one must also be an artist. The preparation of a small group that is to appear life-like is even more difficult than that of a large one, since the space allowed for the development of the effect of distance is very slight. With animals living in underbrush or rocks this difficulty is not so great. But when one attempts to put, in a case measuring 7 by 18 inches, a male robin pulling an earthworm from the ground, his mate on the branch of an apple tree, against the background of a large orchard, the task is no small one. Mrs. Parson meets it successfully with good proportions of both accessories and background.

LIBRARY.

The library of the Children's Museum was opened to the public in April 1900, but its actual beginning antedates the institution of which it is a part. For it is a direct descendant of the first free library established in the city of Brooklyn.

More than a century ago, in 1823, a company of gentlemen established the "Brooklyn Apprentice's Library," which in 1843 became the "Youth's Free Library," extending its privileges to minors of both sexes. At that time prizes were awarded for the best essays on geography and natural history, and also for the most accurate mechanical drawings, submitted by the readers.

In 1887, the organization known as the Youth's Free Library was incorporated as the Brooklyn Institute of Arts and Sciences, and its collection of books became a general library, called the Brooklyn Institute Library. When the Children's Museum was established, the nucleus of its library was formed from a selection of The Youth's Free Library

GENERAL READING ROOM OF THE LIBRARY.

books (which had been stored in the building since the destruction by fire of the old building of the Institute), to which were added by purchase a few hundred new illustrated volumes adapted to the use of children and students. Since that time, additions have been made from month to month, so that the Museum now possesses a well-rounded library of about 10,000 volumes that is both up-to-date and adequate to meet most of the demands made upon it. Dr. Lucas once said it was

the "best natural history library in the country;" since that time it has grown more valuable.

The books, however, are not restricted to natural history, nor are they distinctly of the "nature study" type. They range from picture books and simple stories to scientific and technical manuals, and include a good collection of encyclopedias and dictionaries. Ninety current periodicals are received. All books are for reference use only, and are consulted by about 60,000 children yearly, with now and then an adult seeking information that he cannot get in a general library.

The value of selecting such a library as this makes it worth while to give a general summary of the books which it contains, with citations of a few of the more representative titles:

NATURAL SCIENCE.

Including Zoology, Botany, Physiology and Hygiene. It consists of studies of animal life, and illustrated field books for identifying birds, flowers, and trees. There are hand-books for teachers, books on conservation, forestry, and gardening, such as: "Encyclopedia of American Horticulture," and "Pictured Knowledge." Several complete sets of periodicals, such as "Bird Lore," "Country Life in America," "Nature Study Review," "The Nature Magazine," "Natural History," "The Guide to Nature," "American Forestry," and several complete sets of Entomological Magazine.

HISTORY AND BIOGRAPHY.

Stories of great leaders and heroes, discoverers and explorers. Classic legends, text-books and year-books, current history and present day topics. "History for Ready Reference," "Book of History," "National Cyclopedia of American Biography," *Magazines.* "Journal of American History," "Current History," "The World's Work," "The Survey."

GEOGRAPHY AND TRAVEL.

Commercial, descriptive, and physical geographies; books of travel, gazetteers and atlases. Sets of "National Geographic Magazine," "Journal of Geography," and "Asia."

APPLIED SCIENCES.

Astronomy, Experiments in Physics, Electricity and Chemistry. Practical books on Handicraft and Radio. Stories of Inventions, and their application to every-day life.

Magazines:—"Popular Mechanics," "Popular Science Monthly," "Scientific Monthly," "School Science and Mathematics," "Radio News," "Monthly Evening Sky Map."

LITERATURE.

Collections of poems, books of plays, and famous stories. "Library of the World's Best Literature," "Cumulative Book Index," "New International Encyclopedia," "Encyclopedia Britannica," "Encyclopedia Americana," "Compton's Pictured Encyclopedia."

EDUCATION.

History of Education, Psychology and Pedagogy. Supplementary Readers; Periodicals for teachers, such as "Popular Educator," "Primary Education," "Teachers Monographs," "Normal Instructor," and "Teachers College Record."

ART.

Architecture, Drawing, and Photography. Famous Painters, Sculptors, and Musicians. "Great Artists," "Dictionary of Music and Musicians." "Young Peoples Story of Music," "Story Lives of Great Musicians," "Cyclopedia of Painters and Painting," and "Picture Study in Elementary Schools." The monthly Bulletins of numerous art museums of America.

Personal help is given to readers who seek information of any kind, for example, Boy Scouts, Girl Scouts, Campfire Girls, and Woodcrafters, and members of similar organizations.

Stress is laid on two points—encouragement of the reading habit and teaching children how to obtain information from books. To foster the reading habit, cards are provided in the back of each book, on which are written the child's name and the number of the page where he stops reading. When the child comes again the place is quickly found and the story continued. Reading is coördinated with school work by means of

syllabi of courses of study, which are supplied by the Board of Education, and are followed by the Museum.

The reading room of the library is well suited to the display of picture bulletins. A wire partition between the reference room and the hall affords a place for posters dealing with new books. Several kinds of posters are used, with considerable success. There are always on exhibition nature pictures and bulletins dealing with birds, flowers aand trees. They are chosen for each season or event that demands new material and frequently changed. There are Bird Bulletins, and also cumulated monthly lists of birds seen in Prospect Park, which are provided by the Bird Lovers' Club of Brooklyn.

There are also patriotic bulletins commemorating significant dates, such as Washington's Birthday, Lincoln's Birthday, and Memorial Day, as well as bulletins with appropriate pictures and decorations for other holidays. Picture bulletins are devoted to scenes from foreign lands, or the childhood of famous people whose names and pictures may appear in poems, dealing with the appropriate person or country.

LECTURES—PUBLICATIONS.

A public lecture is given every week day except Monday and Saturday, at 4 P. M. On Saturdays lectures are given at 10:30 A. M. and 2:30 P. M. These have proved so popular that the small lecture room is quite inadequate for the audience that gathers.

It is, however, well equipped with a stereopticon and motion picture machine. Often a lecture must be repeated, occasionally several times, when six or seven hundred wish to hear the same talk. If some children have walked several miles and others have come long distances on the cars, to disappoint them would be to defeat the object of their visit and the aim of the museum. The only thing to do it to repeat the lecture until everyone is satisfied.

The lectures are illustrated with both colored and plain lantern slides, motion pictures, apparatus, and experiments. Special lectures may be given by arrangement with the Museum. Frequently teachers ask for subjects which will be

helpful in connection with their school work. Officers of the Board of Education coöperate by permitting, and even encouraging the principals of schools to send children to the museum during school hours for special lectures.

Since nature study is required by the Board of Education, the Museum talks on nature parallel their schedule. The lecture programs are prepared a month in advance and copies of the program are mailed to all public and private schools in Brooklyn where they are posted on bulletin boards. They are also published in the daily newspapers. The following is an example for a month:

Grades 7A or 7B		Domestic Science	Tuesdays, 4:00 P. M.
January	8	The Water Supply of New York City	
	15	The Story of Rice and Sugar	
	22	Milk from Dairy to Farm	
	29	Animal Productions for City People	
Grades 5A or 5B		American History	Wednesdays, 4:00 P. M.
January	9	Growth and Progress of the United States of America	
	16	The War with Our Mexican Neighbors	
	23	The Civil War (Part I.)	
	30	The Civil War (Part II.)	
Grades 8A or 8B		Physics	Thursdays, 4:00 P. M.
January	3	The Single Cell	
	10	Chemical Actions in a Cell	
	17	Different Kinds of Cells and their Uses	
	24	The Galvanometer	
	31	Induction	
Grades 6A or 6B		Motion Pictures	Fridays, 4:00 P. M.
January	4	Making Shoes (Part I.)	
	11	Making Shoes (Part II.)	
	18	The Salmon Industry	
	25	No Lecture	
For all Grades		Foreign Travel	Saturdays, 10:30 A. M.
January	5	A Mediterranean Cruise	
	12	The Egypt of Yesterday and To-day	
	19	A visit to the African Jungle	
	26	A Trip to Japan	
Primary Grades			Saturdays, 2:30 P. M.
January	5	The Footwear of Foreign Children	
	12	Bird Life of the Polar Regions	
	19	Plant Life of the Zones	
	26	The Silk Industry	

The lectures also supplement and enhance the interest in the collections. Frequently after a lecture the children go to one of the rooms to examine a model which by means of the talk has acquired some new meaning, or they go to the library to read on subjects suggested by the pictures illustrating the talk. Always the lecturer seeks to show children how they may apply in every-day life the facts which they learn in the museum at school. The popularity of the lectures is attested by the fact that in a single month as many as 5,700 children attend them, and that in one month alone eighty special lectures were given.

A collection of about five thousand lantern slides, a well selected film library, and a large number of photographs of museum specimens are conveniently filed, and requests for a special lecture can be answered on short notice.

Case talks given by members of the staff are certain to attract a crowd of children. Objects in the exhibit collections are explained, and the useful is combined with the interesting. Thus the instructor shows by means of specimens the difference between useful and harmful hawks, or by both specimens and models, the distinction between poisonous snakes and harmless ones. It is interesting to speculate what the result would be for the country if the children in every town of the land had a chance to learn these simple facts. Away would go the mythical "chicken hawk" and the wicked "hoot owl", and perhaps even the bull snake would be allowed to go about his business of eating mice.

Games have been devised for each of the exhibitions, and are played in the exihbit rooms. Each child is given a card bearing a detailed question which may be answered either by inspecting an exhibit pertaining to the question or reading the label. The children vie with each other in answering the questions quickly and correctly.

The value of these games is proved in a number of ways. The child obtains a wealth of information by becoming thoroughly familiar with the specimens and exhibits: his powers of observation are greatly stimulated, and he is entertained in a beneficial way during his spare time.

The children apply the knowledge gained in this way in

their class rooms with startling appropriateness. In fact it has been said museum children are noticeably brighter in their school work.

Volunteers offer their services to tell stories at Woodcraft Councils or remain in an Exhibit-room for an afternoon when they can play the games with the children or give informal educational talks.

One winter a volunteer gave a series of talks once a week in the History Room on historic Brooklyn. During the week the children in a group visited places of historic interest relevant to the talk and brought to the next meeting most delightful and original reports on things seen and done on their trips. If a doubt arose as to the correctness of some historical point, the child would go to the library to verify the statement.

In the spring a student of old New York and Brooklyn was invited to the Museum to give a lecture. The announcement of this talk brought so many children that the lecture room was crowded beyond its capacity. Children sat on window sills, stood in the aisles, and in the door leading to the porch. Their quickness and eagerness to answer questions asked was astonishing to anyone who was not familiar with the Museum children. When, later in the afternoon, the lecturer was about to leave and was being thanked for his kindness in coming to the Museum he said with much enthusiasm: "Don't thank me. I thank you for letting me know there is such a place as the Children's Museum."

A publication of a Monthly paper "The Children's Museum News" is a means of communication with the general public, especially with the schools. The paper is sent not only to every public and private school in Brooklyn, but to Museums and libraries in this country and abroad.

THE CHILDREN'S MUSEUM LEAGUE.

The Children's Museum League is the children's own organization. The members elect their own officers, and conduct meetings according to parliamentary rules, with occasional advice from a museum instructor. Meetings are held weekly, and programs are prepared at least a week in advance. Talks

are given on museum collections and activities, and on discoveries made on field trips. Even discussions of school topics are brought before the League's open forum. Thus the child learns by free discussion to present a subject in a concise, interesting manner, for no one will stay through a meeting that becomes dull.

Membership costs but ten cents, and so excludes no one. The child receives a membership badge and certificate on which is printed the motto:

"Tell others about the Museum."

and the pledge:

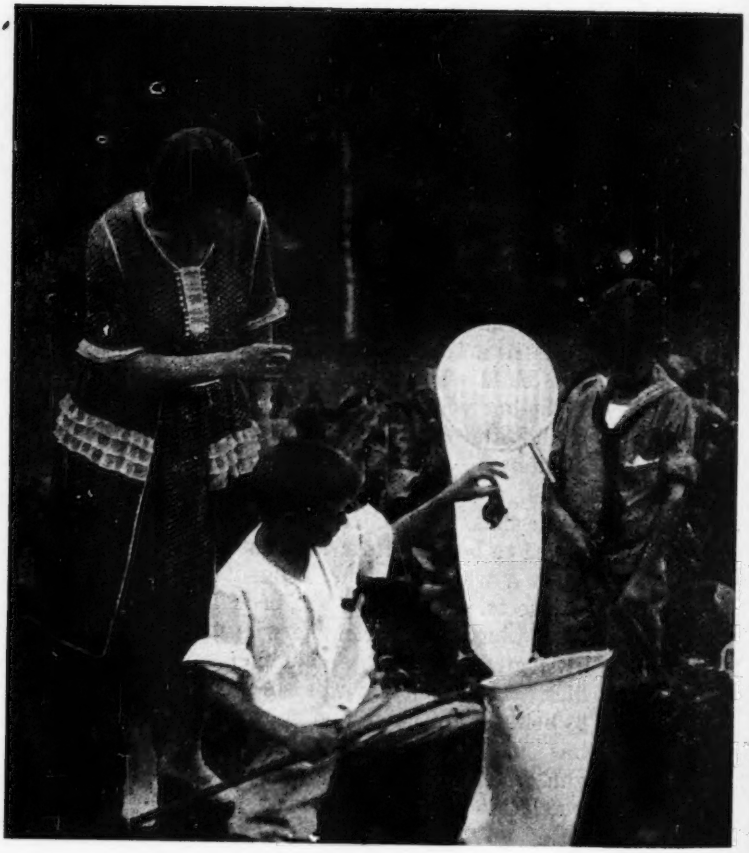
"I promise to wear the League badge, to visit the Museum, to interest others in the museum, and to get new members for the League."

A simple program this, but one that, when faithfully carried out, results in a tremendous extension of the Museum's influence. The child who attends meetings takes an interest in them, and the one who gets new members is anxious to assure himself that the organization to which he belongs has something to offer.

The League member who learns forty insects (ten moths, ten butterflies, ten beetles, and ten straight-winged insects) is entitled to borrow from the Museum a butterfly net. He may keep it a whole summer, using it while making his collection of insects. Specimens are brought to the Museum and the child is taught to spread the wings, mount, and label them. A little girl of six in one summer prepared seventy-five butterflies. The collection was so good that her teacher asked her to bring it to school and show it to the class. Another girl has on exhibition a collection of over five hundred insects, begun when she was nine and finished when twelve. All are correctly identified and labeled.

In the study of minerals a child may borrow a tray containing twenty labeled specimens and a geologist's hammer to use in collecting.

The Museum offers courses of work and study for individual children to follow. These courses are made short and easy for young children, but are graded into more difficult tests until they cover several months. A certificate of credit



COLLECTING BUTTERFLIES ON A FIELD TRIP.

is given on completion of each course. Many work hard for the honor of being presented with a certificate at a meeting of the Children's Museum League. The Library is an important factor in working for tests, for looking up references, and making notes and drawings.

The courses may be chosen in any order and are as follows:

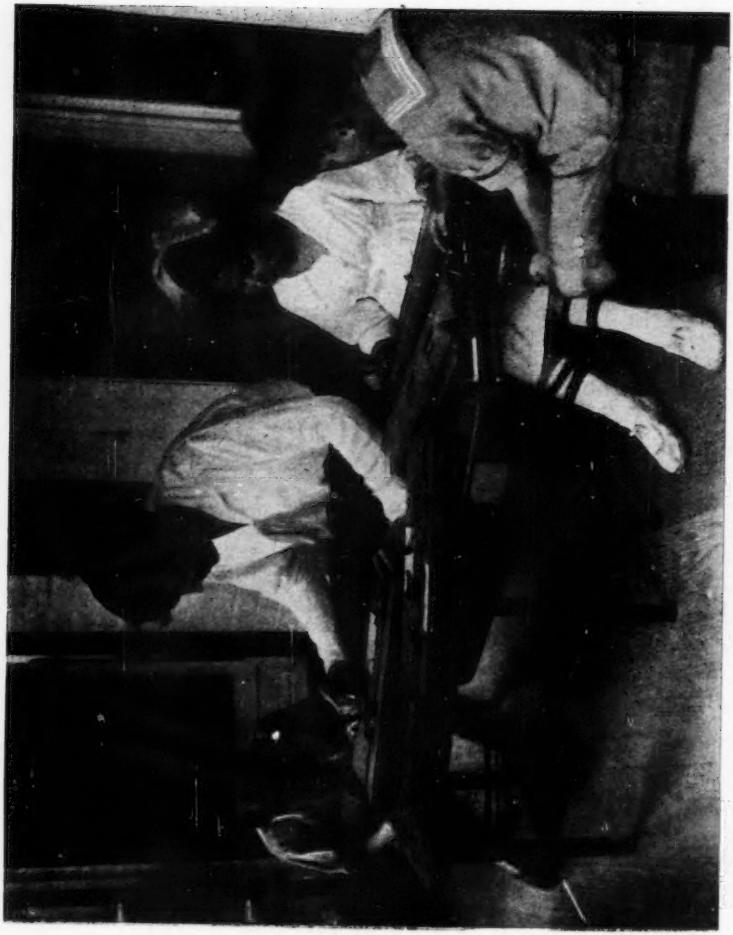
SUBJECTS	VALUE IN CREDITS
Animal Study	20
Aquarium Study	10
Insect Study	15
Bird Study	15
Mineral Study	10
Botany	10
History	10
Geography	10

These eight subjects presented by the Museum collections may be combined in any way. When 50 credits are earned a bronze medal is given to the child in recognition of the achievement.

THE TREE CLUB.

Another active Museum organization bears the formidable title of "Tree Club of the American Association for the Planting and Preservation of City Trees." With its headquarters at the Museum, the Tree Club has chapters throughout the Borough of Brooklyn, and a total membership of about 20,000 children. Anyone from the very young to the child of high school age is eligible, and even adults have joined.

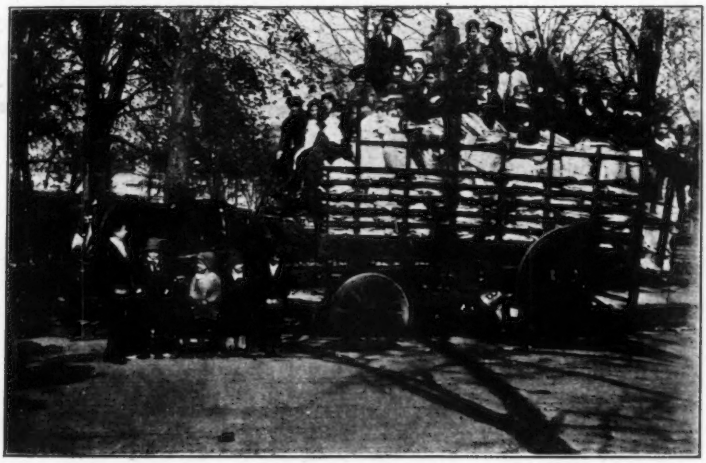
The club has been in existence about twelve years, and in that time has planted many hundreds of trees along Brooklyn's streets, in school yards, and about churches, libraries, and other public institutions. The largest single enterprise undertaken by it is a stretch of six blocks on Albany Avenue, each of which has eighteen sycamores or pin oak trees—more than a hundred trees in all. Funds for tree planting are raised by sale of old newspapers, tinfoil, old rubber, and metal. These are brought to the Museum and stored away in a cellar provided by the Park Department until enough have been collected to sell. The enterprise is fun for the children,



LEARNING TO MOUNT INSECTS.

and substantial results. A drayload of newspapers brings a hundred dollar contribution to the tree fund.

During the summer the children who are at home spend many of their vocation hours collecting egg masses of the Tussock moth. Many thousands of these, each capable of producing about five hundred voracious caterpillars, have been collected by the Tree Club members and burned in the Museum furnace. Not only is the immediate benefit from this destruction of great importance; the lesson of conservation taught by it is even more significant.



THE TREE CLUB SELLS A LOAD OF NEWSPAPERS.

Study out of doors begins in May. The new member can start his work at the very door of the Museum, for there are forty species of trees in Bedford Park alone, and each of them is labeled. Later on trips are made to other parks, to the suburbs, and even into the country, and collections of leaves are made as records of the things seen.

In autumn lectures are given on the life histories of the trees of Long Island and elsewhere. The colored slides show the trees as they appear in summer and in winter; their flowers and fruit, and detailed views of their bark. This is the

same information which colleges and normal schools give to their classes in nature study, though generally with equipment far poorer than that used by the Children's Museum. And so far as can be seen, the children take to the subject quite as readily and as successfully as do the college students. Many a sophomore has found that the museum training gave him knowledge that was only partly and hastily learned by his friends who were training to be teachers in grade and high schools.

Members of the Tree Club who have done specially good work are eligible to the rank of Tree Warden, and at the Saturday morning meetings of the club they report on their work for the week, and assist the others in tree study. They take a real interest in their work, and urge other children to respect the rights of the trees which the city and the League have planted. Thus they materially reduce the vandalism so harmful in a city even more than in a small town.

FIELD TRIPS.

Field excursions are held both in connection with the work of the tree club, and with various other branches of nature study carried on by the Museum. They are conducted under the guidance of a special field instructor during the late spring and summer months.

Groups of children who have shared in the Museum's activities are taken, whether they are members of its associations or not. They visit parks, fields, woods, and seashores—wherever there are the natural materials for nature study. Those interested in insects carry nets, poison jars, and boxes; the bird students have field glasses and notebooks, while those interested in geology and mineralogy have geologists' hammers and collecting bags. Still others carry tin vascula in which to take back flowers. Careful notes are taken on the trips. On their return the youngsters go to the Busy Bee Room for the pressing of their plants, the sorting and identification of minerals, and the mounting of insects on spreading boards. Caterpillars that have been taken are put in the breeding cage, where they may be fed until the time of pupation.

THE WOODCRAFT LEAGUE, GIRL SCOUTS, BOY SCOUTS.

The program of the Woodcraft League of America is particularly suited to the use of the Museum's materials, and several councils of this national organization have been formed. There are tribes for older boys, older girls, and younger boys and younger girls, as well as one for adults who are interested in the work. Meetings are held in the Woodcraft Room, whose walls are decorated with Woodcraft totems. At one end of the room are the Council seats, arranged about the fire; at the other is a series of shelves which are used for the bird houses, lanterns, and other objects made by the Woodcrafters as their tests.

Seed pods, pressed plants, minerals, and other nature materials are brought to the room by members of the tribes. There is a work bench provided with tools, and a good hospitable cook stove that is used on special occasions for the preparation of tribal feasts. The closets are stocked with a complete service of china, glass, and silver for use at such times. The room has other uses as well, for in it children coming to the Museum for a day may eat the box lunches which they bring with them, and luncheons and teas are served to groups of people who are working with or for the Museum.

The Museum also is the headquarters for the nature work among the Boy Scouts and Girl Scouts of Brooklyn, and on Saturday mornings they come to it to prepare for the tests which constantly are being given in their organizations. Work with them is curtailed because of insufficient space.

The girls, however, take their second class nature tests under Museum direction, using Museum material. To do the work more thoroughly, the Museum established a branch museum in the Brooklyn Girl Scout Camp on the shore of Lower Twin Lake, New York. A museum instructor who had worked with the girls through the winter months was detailed to carry on this work in camp. By this means more than four hundred girls who had begun nature work in the museum

during the winter were able to continue it in camp in the summer.

This small camp museum has become a model for those used by Girl Scout organizations in other camps throughout the country, and the movement inaugurated by it promises to add materially to the success of the national conservation program in future years. A girl Scout Museum Nature Club, started at the request of the girls who worked in the museum and camp during 1923, is continuing the interest aroused.

SUMMARY OF RESULTS.

During the twenty-four and a half years of its existence the Children's Museum has achieved what may be justly called notable results. We may summarize these as follows:

1.—It has increased its exhibits from a few models, charts, and specimens, to thousands of items and groups displayed in two corridors and twelve rooms, as well as in extensive collections designed only for circulation to children and institutions.

2.—It has carried on extensive educational and conservation work through lectures, trips, games, and the activities of several juvenile organizations.

3.—It has aroused the people of Brooklyn, particularly through the Woman's Auxiliary, to the importance of museum work, properly conducted by a separate children's museum, in the life of a community.

4.—It has produced actual results among the children with whom it has worked. This is shown by numerous conversations and letters in which men and women testify as to the importance of the Museum in directing their early interests; also in estimates by educators and others of the activities and work of "museum children."

5.—It has served as the forerunner of a large number of children's museums, both in this country and Europe. Among these may be mentioned the children's departments in the new National Museum at Cardiff, Wales, and the Geological Museum of Yale University; the Children's Museum of the Cleveland Museum of Arts, and the children's museums of Boston and Cambridge. These last were developed as direct results of the work of the Brooklyn Children's Museum, and organized on lines adapted from it. In many schools and normal schools the museum departments have either been planned after the Children's Museum, or on lines suggested by it.

Finally, we have the opinion of several museum experts, such as Laurence Vail Coleman, secretary of the American

Association of Museums, and others. Some of the estimates are worth quoting, not only because they indicate the success of the Children's Museum, but because they emphasize the significance of the entire movement in which it was pioneer:

I am confident that the Brooklyn Children's Museum and the Children's Museum at Jamaica Plain are two of the most useful institutions in the country, and I think it is unfortunate that there are not many more museums of the same character scattered over the country. I believe that if all science and art museums could have connected with them *children's museums*, which would develop in the children a love and understanding for the objects in the larger museum, it would be, perhaps, the greatest factor in developing supporters and users of the adult museum.

FREDERICK ALLEN WHITING, *Director*,
The Cleveland Museum of Art, Cleveland, Ohio.

My own regret, in connection with the children's museum idea movement is, that we are not ourselves provided with sufficient space to give adequate room for this branch of our work. I would like nothing better than a situation such as you have, where we could devote a whole building to the children and give special attention to children's exhibits and instruction.

I sincerely trust that there will come a day when every city, not only of the first class, but even minor cities, will possess a good, live children's museum.

S. A. BARRETT, *Director*.
Public Museum of the City of Milwaukee, Milwaukee, Wisconsin.

If I were given the alternative of establishing a recreational and scientific museum or a children's museum, modeled on the lines of your excellent institution, I would feel that the funds were put to the better use in supporting the children's museum.

As a matter of fact, if it were possible to begin at the beginning, I would rather establish a children's museum first and expect the development of the larger museum to grow from it, for in that way the community would raise up its friends of the museum movement in its own school of entertainment and instruction. They would be the best type of citizens, capable of appreciating and understanding the objects and the purpose of museums.

WILLIAM ALANSON BRYAN, *Director*.
Los Angeles Museum of History, Science and Art.

And finally, this forcible statement by a musician who also is an educator, written in the Children's Museum on January 8, 1924:

"The Children's Museum does universally for children just what I

have always urged people to do for them in music. It gives them the best and nothing but the best. Most parents have the idea that a cigar-box violin is good enough for little Johnnie to learn on. When he is accomplished, they say, he can have a better fiddle. What folly! Johnnie will have troubles enough without the added handicap of poor tools. A Stradivarius is none too good for him. If you must give anybody a cigar-box give it to Kreisler. He could get music out of a shredded wheat biscuit. But let us always take our cue from the Children's Museum and give the children the best we have."

ROBERT HAVEN SCHAUFFLER.

NOTE:—*This periodical is indebted to Mrs. Anna C. Montgomery and Miss Anna Billings Gallup for information concerning the Children's Museum, and to Miss Gallup for permission to use the numerous cuts belonging to the Museum.*

The Native Flora of the Vicinity of Cold Spring Harbor, N. Y.*

SCHIZOPHYTA, MYXOMYCETES, DINOFLAGELLATAE, BACILLARIOPHYTA.

N. M. GRIER.

While this contribution is intended to serve primarily as a check list for the use of students and botanical research workers at the Biological Laboratory, Cold Spring Harbor, New York, it will also serve to acquaint others who may be interested with the rich flora of the vicinity of the Laboratory, and indicate opportunities for its further study.

Since assuming charge of the course in Field and Systematic Botany at the Laboratory, the writer and assistants have been engaged in making a card catalogue of the native and cultivated plants in the vicinity of the Laboratory as these were collected by members of the staff and students. He has also examined and assembled records left by former workers at the Laboratory and from the foregoing and all other available records in the literature dealing with the Flora of Long Island—including all those species apt to be encountered by members of the Laboratory in the field—has compiled the following list. All who collect in the vicinity of Cold Spring Harbor in the future are requested to send their records to the Director of the Laboratory in order that the knowledge of the local flora be as complete as possible. The workers whose data besides that of the writer is represented in this list are:

Professor L. N. Johnson, University of Michigan—L. N. J.

Professor D. S. Johnson, Johns Hopkins University.—D. S. J.

Mrs. Mary Lentz Johnson—M. L. J.

Dr. H. H. York, New York State Conservation Commission, Albany, N. Y.—H. H. Y.

---

* Contribution No. 8 from the Biological Laboratory, Cold Spring Harbor, N. Y.

Dr. G. C. Fisher, American Museum of Natural History.—G. C. F.

Professor L. D. Swingle, University of Utah.—L. D. S.

Professor W. E. Maneval, University of Missouri.—W. E. M.

Dr. A. F. Blakeslee, Carnegie Institution, Cold Spring Harbor, N. Y. —A. F. B.

Professor H. S. Conard, Grinnell College.—H. S. C.

Professor E. N. Transeau, Ohio State University.—E. N. T.

Professor J. Arthur Harris, University of Minnesota.—J. A. H.

Miss Miriam Bomhard, University of Pittsburgh.—J. A. H.

Miss Charlotte Easton, University of Chicago.—C. E.

Miss Gail Holliday, Wheeling High School.—G. H. H.

Professor Susan A. Green, Maryville College.—S. A. G.

Miss Betty Watt, Carnegie Institution, Cold Spring Harbor, N. Y. —B. W.

Professor John W. Harshberger of the University of Pennsylvania and Professor O. E. Jennings of the University of Pittsburgh have contributed through the verification of records. Others who kindly aided in revising certain portions of the manuscript group are cited in connection with their particular service.

"Die Natürliche Pflanzenfamilien" of Engler and Prantl and the "Syllabus der Pflanzenfamilien" of these authors, (1919) form the back ground of the taxonomy and nomenclature used in the cryptogamic groups exclusive of the Pteridophyta, although the specialists revising these have been given full sway, authoritative works being cited. In the Pteridophyta and all higher groups the arrangement is essentially that of Britton and Brown's "Illustrated Flora of the Northern States and Canada," edition of 1913.

I.—SCHIZOPHYTA.

SCHIZOMYCETES.

Here Jelliffe* includes common pathogenic and saphro-

* Jelliffe, S. E. "The Flora of Long Island" published by the author 64 W. 56th St. N. Y. City, N. Y. Also "Additions to the Recorded Flora of Long Island" Torreya 4. Hereafter reference to these papers will be to the name of this author, with whom, however, were associated other collectors in compiling the records.

phytic bacteria and lists also the following as not being infrequent.

BACTERIACEAE.

Pseudomonas pyocyanea (Gessard) Migula.

Pseudomonas violaceus (Schroeter) Migula.

Pseudomonas fluorescens (Fluegge) Migula.

PHYCOBACTERIACEAE.

Cladothrix dichotoma Cohn. In water.—Jelliffe.

BEGGIATOACEAE.

Beggiatoa alba Trev. Frequent on Long Island.—Jelliffe.

Beggiatoa mirabilis Cohn. On stalks and stones in inner harbor.—D. S. J.; H. H. Y.

SCHIZOPHYCEAE †

CHAMAESIPHONACEAE.

Chamaesiphon SP. Epiphytic on *Cladophora* sp.—D. S. J.

CHROOCOCCACEAE.

Calothrix confervicola Ag. On *Cladophora* tide pools. Lloyd's Point, L. I.—M. L. J.

Calothrix crustacea (Schousb.) Bar. and Thur. On grasses and algae at Eatons Point, L. I.—N. M. G.

Calothrix parasitica (Chauvin) Thuret. Common on *Nemalion*.—C. S. H.; D. S. J.

Calothrix pulvinata Agardh.—C. S. H. Growing on tufts of *Spartina patens*.—D. S. J.

Calothrix scopulorum (Web and Mohr.) Ag.—C. S. H. On posts under old mill.—D. S. J.

Clathrocystis rosea—persicina Cohn. Salt creeks, Laurelton pier.—D. S. J.

---

† This group is revised following the terminology given in "Minnesota Algae." Vol. I. Report of Survey, Botanical Series VIII., Professor Josephine Tilden, U. of Minnesota.

Chröococcus turgidus (Kütz) Naeg. On *Spartina* stubble inner harbor.—C. S. H., D. S. J. and H. H. Y.

Coelosphaerium Kutzingianum Naeg. Frequent.—Jelliffe.

Dactylococopsis rhaphidivides Hans. Common in Jarvis pond. —C. S. H.; N. M. G.

Gloiotrichia natans. Thur.—C. S. H. On submerged plants and sticks in 1st lake.—M. L. J.

Merismopaedia glauca Naeg. Not infrequent.—Jelliffe.

NOSTOCACEAE.

Anabaena torulosa Carm.—C. S. H. On mud among *Spartina* stalks.—D. S. J.; H. H. Y.

We are able to confirm Burnham and Latham's record for this plant.* (*Torreya*, 14.)

Anabaena variabilis Kuetz. West side inner Cold Spring Harbor.—D. S. J.

Cylindrospermum majus Kuetz. Bottom of Jarvis Pond.—C. H. S.; N. M. G.

Nostoc Sp. Inner Harbor.—C. S. H.; D. S. J.

Spaerozyga carmichaeli (Harv.) Estuary north of cement bridge.—C. S. H.; H. H. Y.

Sphaerozyga polysperma Kuetz. Vicinity Cold Spring Harbor. —H. H. Y.

Sphaerozyga thuretii Cru. Vicinity Cold Spring Harbor.—D. S. J.

OSCILLATORIACEAE.

Lyngbya aeruginea caerulea Kuetz. Frequent on Long Island.—Jelliffe.

Lyngbya aestuarii Ag. Pools in the salt meadows.—C. S. H.; N. M. G.

Lyngbya confervoides C. Agardh.—C. S. H. On mud in outlet from hatchery ponds.—D. S. J.

Lyngbya luteofusca (Ag.) J. Ag. Research wharf, Cold Spring Harbor.—D. S. J.

Lyngbya nigrescens Harv. Not infrequent along coast.—Jelliffe.

Lyngbya semiplana J. Ag.—C. S. H. Mud and tangles about *Spartina*.—D. S. J.; H. H. Y.

Microcoleus sp. Old pier, Cold Spring Harbor.—D. S. J.

Microcoleus chthonoplastes Thuret.—C. S. H. On mud between *Spartina* stems.—D. S. J.

Microcoleus tenerrimus Desmaz. Algal mats on marsh.—C. S. H., D. S. J. and H. H. Y.

Oscillataria Sp. Seven incompletely identified species of this genus are found among the algal felts in Cold Spring Harbor.—D. S. J.

Phormidium laminosum (Agardh) Gom. Jarvis pond.—C. S. H.; M. L. J.

Oscillatoria animalis Agardh. Forming mats in first lake.—C. S. H.; D. S. J.

Oscillatoria formosa Bory.—C. S. H. Floating in water in trout pool.—L. D. S.

Oscillatoria gracilima Vauch. Common in Jarvis pound.—C. S. H.; N. M. G.

Oscillatoria limosa Agarth. In mats of other *Oscillatoria* sp.—D. S. J.

Oscillatoria ornata Kuetz? Forming brightest green mats in
Oscillatoria ornata Kuetz? Forming bright green mats in

Spirulina subsala Oersted.—C. S. H. On *Zostera* in inner harbor.—H. H. Y.

Spirulina thuretii Con. Laurelton Pier.—H. H. Y.

RIVULARIACEAE.

Isactis plana (Harvey) Thuret. Algal Felts on Marsh.—C. S. H. Inner Harbor.—D. S. J.; H. H. Y.

Rivularia atra Roth. East band of estuary.—C.S.H.; H. H. Y.

Rivularia Sp. Inner Harbor.—C. S. H.; D. S. J.

Rivularia Nitida Agardh. North and east Shore Cold Spring Harbor.—D. S. J.

II.—MYXOMYCETES.*

CERATOMYXACEAE.

Ceratiomyxa fructiculosa (Muell.) Macbr. On Moss.—C. S. H.; M. L. B.

Ceratiomyxa poriodes (Alb. and Schw.) Schroeter. On stump near falls second lake.—C. S. H.; D. S. J.

CLATHROPTYCHIACEAE.

Dictidium cancellatum (Batsch) Macbr. Abundant on Wood.—C. S. H.; D. S. J.

Enteridium splendens Morg. On rotten wood west of 1st lake.—D. S. J.

CRIBRARIACEAE.

Cribraria aurantiaca Schrad.—C. S. H. On rotten wood near first lake.—D. S. J.

Cribraria languescens Rex.—C. S. H. On rotten wood—hills west of 1st lake.—D. S. J.

---

* Revised following the terminology given in "North American Slime Molds," (new and revised edition.) T. H. MacBride, MacMillan and Company, 1922. See also papers by Burnham and Latham, *loc. cit.* and "Contribution to the Recorded Fungus and Slime Mould Flora of Long Island." Reichling, G. A., Torreya, 5.

Cribraria microcarpa Pers.—C. S. H. On rotten wood of 1st lake.—D. S. J.

Cribraria minutissima Schwein.—C. S. H. On rotten wood. Hills west of 1st lake.—D. S. J.

Cribraria piriformis Schrad. On decaying log 1st lake.—C. S. H.; D. S. J.

Cribraria tenella Schrad.—Jelliffe.

DICTYOSTELIACEAE.

Dictyostelium mucoroides Brefeld. On muskrat dung.—D. S. J.

DIDYMIACEAE.

Chondrioderma spumarioides (Fries.) C. S. H. On dead leaves near 1st lake.—D. S. J.

Diderma testaceum (Schrad.) Rost.—C. S. H. On dead leaves near 1st lake.—D. S. J.

Diderma effusum (Schw.) var. reticulatum Rost. On L. I. —Jelliffe.

Didymium melanospermum (Pers.) Macbr. At head of 1st lake.—C. S. H.; D. S. J.

Didymium nigripes (Link.) Fries. Frequent on dead leaves. —C. S. H.; D. S. J.

Didymium squamulosum (Alb. and Schw.) Fries. On dead leaves at head 1st lake.—C. S. H.; D. S. J.

LICEACEAE.

Tubulina ferruginosa (Batsch) Mac. B. Abundant on wood —C. S. H.; D. S. J.

PHYSARACEAE.

Badhamia decipiens (Cort.) Berk. On dead oak leaves.—C. S. H.; West of 2nd lake.—G. C. F.

Badhamia lilacina (Fr.) Rost. On growing herbs near 3rd lake.—C. S. H.; D. S. J.

Badhamia rubiginosa (Chev.) Rost. On L. I.—Jelliffe.

Fuligo septica (Linn.) Gmel. On rotten log.—C. S. H.; M. L.

Leocarpus fragilis (Dickson) Rost. Link. Occasional on mosses, dead leaves in vicinity of school house.—C. S. H.; D. S. J.

Physarum globuliferum (Bull.) Pers. Occasional on wood.—C. S. H.; D. S. J.

Physarum leucopus Link. On leaves at 1st lake.—C. S. H.; D. S. J.

Physarum nodulosum Cke and Balf. On dead leaves near first lake.—C. S. H.; D. S. J.

Physarum nucleatum Rex. On Long Island.—Jelliffe.

Physarum sinuosum (Bull.) Weinm. Frequent on wood, leaves and moss.—C. S. H.; D. S. J.

Physarum tenerum Rex. Woods west of 1st lake.—C. S. H.; D. S. J.

Physarum virescens Difm. On moss near 1st lake.—C. S. H.; D. S. J.

Physarum viride (Bull.) Pers. On rotten sticks near 1st lake.—C. S. H.; D. S. J.

PLASMODIOPHORACEAE.

Hemitrichia clavata (Pers.) Rostf. Frequent on wood.—C. S. H.; D. S. J.

Hemitricha vesparium (Batch.) Macbr. Common on wood.—C. S. H.; D. S. J.

Hemitrichia stipitata (Mass.) Macbr. On rotten wood.—C. S. H.; G. C. F.

RETICULARIACEAE.

Reticularia lycoperdon (Bull.) Rost. On tree neear men's dormitory.—C. S. H.; D. S. J.

Tubifera ferruginosa (Batsch) Macbr.—C. S. H. On old stumps near Blackford hall.—M. L. B.

STEMONITACEAE.

Comatricha caespitosa Sturgis.—Jelliffe.

Comatricha longa Peck. On rotten wood.—C. S. H.; D. S. J.

Comatricha lurida List. On L. Island.—Jelliffe.

Comatricha nigra. (Pers.) Schroeter. On wood west of 1st lake.—C. S. H.; D. S. J.

Comatricha typhoides (Bull.) Rost.—C. S. H. On old logs in lake region.—M. L. B.

Diachea elegans Fries. On Long Island.—Jelliffe.

Enerthenema papillatum (Pers.) Rost.—C. S. H. On rotten wood west of 1st lake.—D. S. J.

Lamproderma arcyrionema Rost. On rotten wood.—C. S. H.; D. S. J.

Stemonitis fusca (Roth.) Rost. Abundant on wood.—C. H. S.; D. S. J.

Stemonitis pallida Wingate. On old wood.—C. S. H.;D. S. J.

Stemonitis smithii Macbr.—C. S. H. On rotten wood by 1st lake.—N. M. G.

Stemonitis splendens Rost.—C. S. H. On rotten wood in swamp by lakes.—M. L. J.

TRICHIACEAE.

Arcyria ferruginea Sauter.—C. S. H. On rotten wood, hill west of 1st lake.—D. S. J.

Arcyria denudata (Linn.) Sheldon. Very common on wood. —C. S. H.; D. S. J.

Arcyria incarnata (Pers.) Macbr. On rotten wood.—C. S. H.; M. L. B.

Arcyria nutans (Bull.) Grev. On rotten wood west of 1st lake —C. S. H.; D. S. J.

Hemiarcyria clavata (Pers.) Rost. Woods west of 1st lake. C. S. H.; N. M. G.

Hemiarcyria rubiformus (Pers.) Rost. Cold Spring Harbor vicinity.—D. S. J.

Lachnobolus globosus (Schw.) Rost. Frequent on rotten wood.—C. S. H.; D. S. J.

Lycogola epidendrum. (Buxb.) Av. In old woods, south side Long Island.—M. L. B.

Trichia persimilis Karst. Occasional on wood.—D. S. J.

V.—BACILLARIOPHYTA, (*Diatoms*)*

ACHNANTHOIDEAE.

Cocconeis pediculus Ehrb. Frequent throughout island.—Jelliffe.

Cocconeis scutellum Ehrb. On *Zostera* in Inner Harbor.—C. S. H.; D. S. J.

DISCOIDEAE

Gaillonella nummuloides (Dilw.) Bory. On *Zostera* in Inner Harbor.—C. S. H., D. S. J. and H. H. Y.

Lysigonium moniliforme (Muell.) Link. On *Zostera* in Inner Harbor.—C. S. H., D. S. J. and H. H. Y.

Meloseira granulata (Ehrb.) Kuetz. Fossil.—C. S. H.; D. S. J.

FRAGILAROIDEAE.

Asterionella formosa (Hass.) Fr. Frequent throughout island. —Jelliffe.

Diatoma hiemale (Lyngb.) Heiberg. Frequent Long Island. —Jelliffe.

Diatoma vulgare Bory. Common in second lake.—C. S. H.; N. M. G.

Eunotia lunaris (Ehrb.) Grün. Frequent throughout Long Island.—Jelliffe.

Fragillaria capucina Desmaz. Common throughout the island. —Jelliffe.

Fragilaria virescens Ralfs. Common in second lake.—C. S. H.; N. M. G.

Synedra offinis Kuetz. On *Zostera* Inner Harbor.—C. S. H.; D. S. J. and H. H. Y.

Synedra pulchella (Ralfs.) Kuetz. Common throughout the Island.—Jelliffe.

Synedra radians Kuetz. In second lake.—C. S. H. Common. —N. M. G.

Synedra ulna (Nitsch) Ehrb. Second lake.—C. S. H. Common.—N. M. G.

Rhabdonema Adriaticum Kuetz. Not infrequent throughout coast.—Jelliffe.

Tabellaria fenestrata Kuetz. Frequent in fresh water.—Jelliffe.

Tabellaria flocculosa (Roth) Kuetz. Second lake.—C. S. H. Common.—N. M. G.

NAVICULOIDEAE.

Amphipleura sp. On *Zostera* Inner Harbor.—C.S.H.; N.M.G.

Amphora ovalis (Breb.) Kuetz. Frequent.—Jelliffe.

Gomphonema constrictum Ehrb. Common in second lake.—C. S. H.; D. S. J.

Navicula virdis Kuetz. Frequent throughout island.—Jelliffe.

Pleurosigma angulatum (Quek) Cl. Mud, pebbles, etc.—C. S. H.; D. S. J.

Neidium affine (Ehr.) Pfitzer. Common in second lake.—C. S. H.; D. S. J.

Navicula cuspidata Kuetz. Common throughout island.—Jelliffe.

Navicula grevillei (Ag.) Cl. On *Zostera* Inner Harbor.—C. S. H.; N. M. G.

Navicula Kennedyi W. Sm. On *Zostera* Inner Harbor.—C. S. H.; H. H. Y.

Navicula Lyra Ehrb. Not infrequent around coast.—Jelliffe.

Navicula major Kuetz. Common in second Lake.—C. S. H.; D. S. J.

Gyrosigma Balticum (Ehr.) Cl. Not infrequent in salt marshes, throughout island.—Jelliffe.

Pleurosigma distortum W. Sm. Mud, pebbles, etc.—C. S. H.; D. S. J.

SURIRELLOIDEAE

Surirella elegans Ehrb. Not infrequent throughout island.—Jelliffe.

---

* Revised according to Van Huerck's "Treatise on the Diatomaceae" with some reference to "The Diatomaceae of Philadelphia and Vicinity." —C. S. Boyer, Philadelphia, 1916. J. B. Lippincott Company.

(*To be Continued.*)

Dartmouth College,
Hanover, N. H.